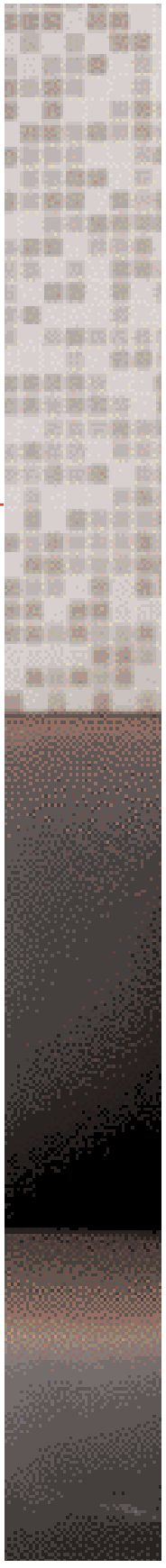
MASTER CLASS

SACRED GEOMETRY

Simplifying the fretboard with Pat Martino

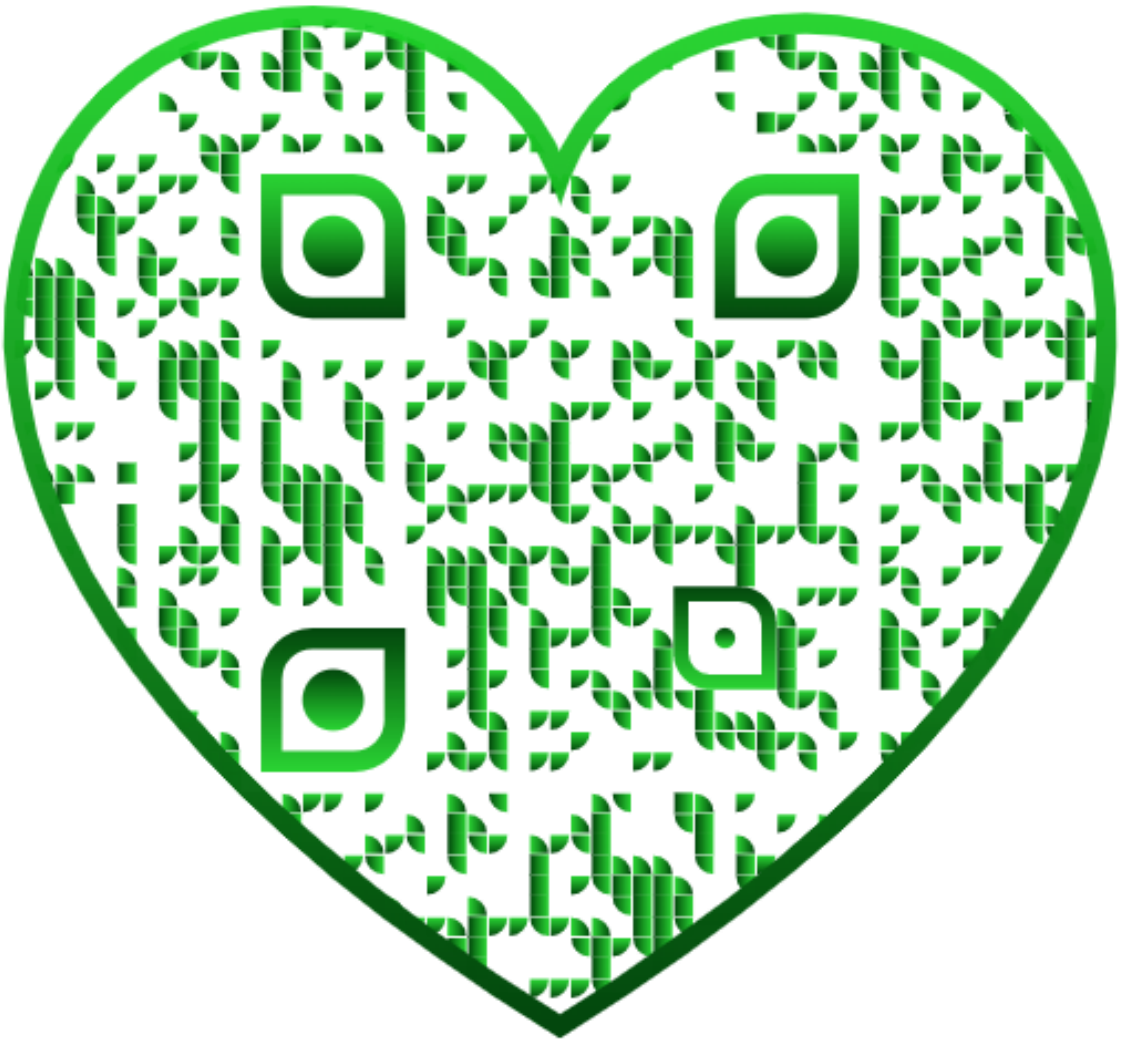
BY JUDE GOLD



If there's one common misconception people have about geniuses, it's the notion that these stellar intellects engage only in the most strenuous of thought; that in order to even hold a conversation with one of these brainiacs you need an Ivy League PhD, an IQ of 200 or more, and a bulbous cranium that makes you look like a character from *Star Trek*. In reality—as brilliant inventions such as the wheel, the light bulb, the magnetic guitar pickup, the TV dinner, and the Pet Rock all so vividly prove—the most ingenious ideas are often the *simplest*. And if the mark of true genius is the ability to find simple, head-slapping, gosh-why-didn't-I-think-of-that solutions to complex problems, then Pat Martino is truly one of the guitar's cleverest minds. In this lesson, the jazz legend shares with you an inspiring re-mapping of the fretboard that is radically different from what is typically taught in private lessons or at music schools.

"The guitar is structured like no other instrument," states Martino, "and it unveils itself in a unique way. Like the piano, it has its own fully unique temperament. But the communal language of music that all musicians share—that is, the language of scales, theory, and intervals that we all use when explaining or communicating music—really has nothing specifically to do with any instrument other than the piano."

But guess what, guitarists: It's now finally time to describe music from *our* point of view. And there's probably nobody more qualified to step up to the podium and demonstrate a guitar-centric vision of the musical universe than Martino, because he has written a mesmerizing treatise called *The Nature of Guitar* that may forever change how you visualize



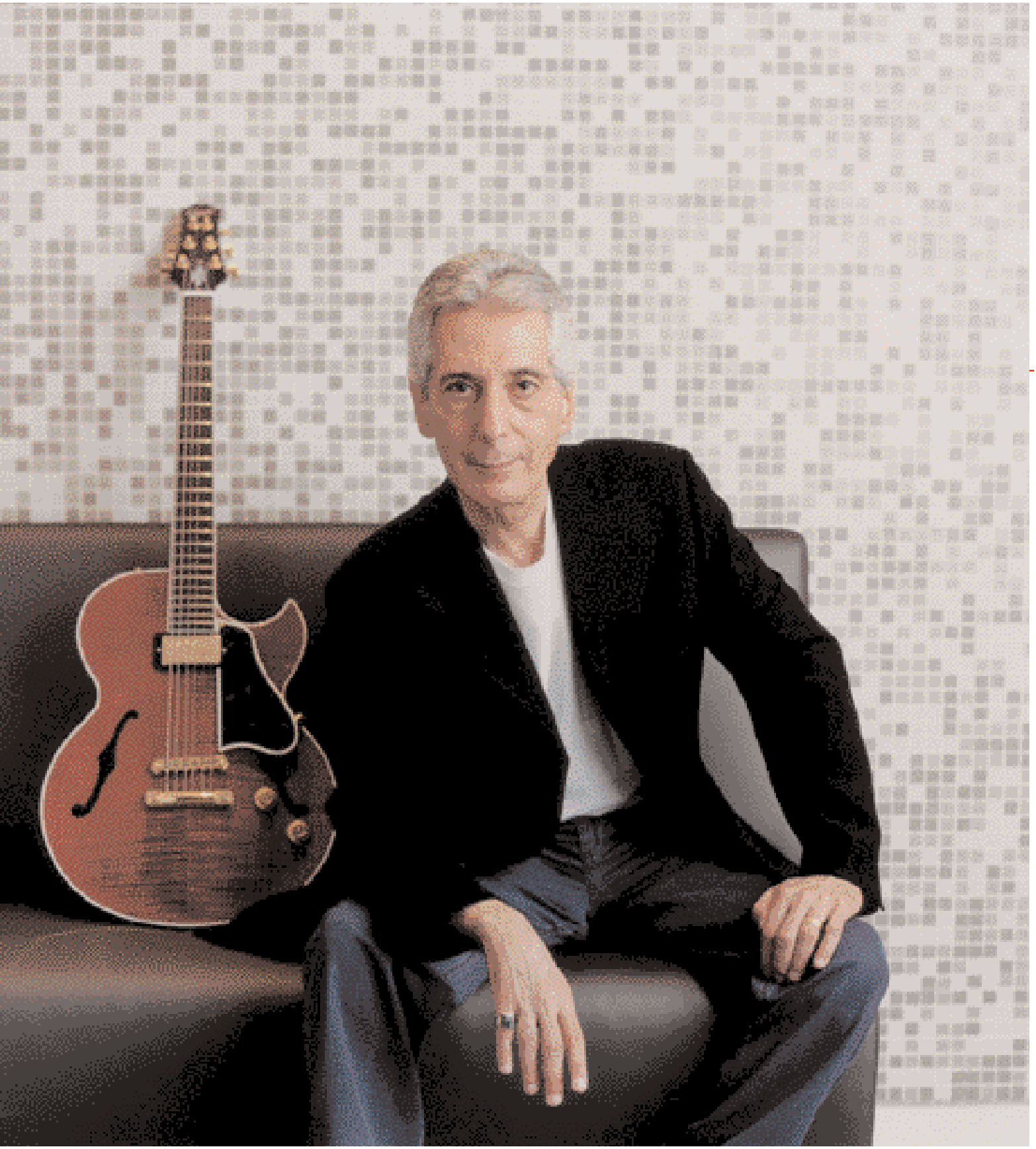


PHOTO CREDIT

the way harmony, melody, and improvisation all function on the fretboard.

And yes, Martino's genius ideas are almost childishly simple.

ABANDONING THE PIANO

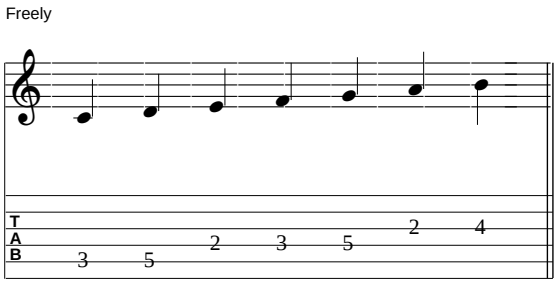
"Here's the piano," says Martino, playing the *C* major scale in Ex. 1. "These seven notes are the white keys. And the piano's black keys are here [Ex. 2]. These five black keys spell a *D♯* pentatonic minor scale, starting on the 7, *C♯*. Combine those two groups of notes and you get all 12 notes of the octave—in other words, you get the chromatic scale [Ex. 3]. That's seven plus five. It's a system of addition—a *horizontal* system based on the fact that the piano goes from left to right, from lower in pitch to higher in pitch. This is where scales come from, which are part of the community language you use to function with other musicians so that you can discuss modes and scale forms, etc. But scales really have nothing to do with how the guitar works. The guitar does *not* work horizontally."

MEET THE PARENTS

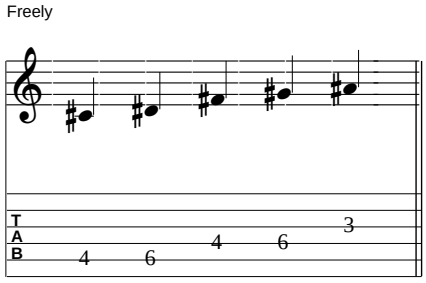
The guitar, like the piano, *does* have horizontal properties, at least in the sense that as you ascend horizontally from left to right on a given string the notes get higher in pitch. What makes the guitar inherently different, though, is that it also has a *vertical* nature, because it allows you to move up and down—which is exactly what you do when move from a higher string to a lower string or vice versa. This means that the fretboard is an *x-y* axis. "It's a matrix," adds Martino. "By being both horizontal and vertical, you have latitude *and* longitude. It's like a compass—north, east, west, and south."

We're about to enter the heart of

EX. 1



EX. 2



EX. 3

Martino's unique vision of the fretboard—but fear not: Although Martino plays some of the most ferocious, angular modern jazz lines you'll ever hear from a guitar player, all you'll need to grasp the concepts that follow is a basic knowledge of music theory, because, in Martino's mind there are only two basic shapes you absolutely *must* know to unlock the secrets of the fretboard. One of them is the augmented triad (a major triad with a raised 5) such as the *Caug5* in Ex 4.

"This augmented cluster is one of two parental forms on the guitar," explains Martino. By "parental," Martino means that the augmented triad—in this case a *Caug5* spelled *C-E-G♯*—produces multiple chordal offspring. Specifically, it's a harmonic gateway to three major chords. Just lower any one of its three tones and you get a major triad. As shown in Ex. 5, if you drop the lowest note, *C*, a half-step, you get an *E* major triad. Or, lower the middle note, *E*, the same distance, and you have a *G♯* major triad. Or, finally, knock the highest pitch, *G♯*, back one fret to hear a *C* triad. Slick!

"Also, be sure to try *raising* any note in the augmented cluster a half-step," encourages Martino. "That's how you'll get minor chords. For instance, raise the lowest note in our *Caug5* chord a semi-tone to *C♯*, and you've got a *C♯* minor triad. Sharp just the middle note, and you'll hear an *F* minor triad. Or, raise the highest note, and you've got *Am*."

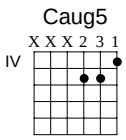
The other parental shape that Martino deems crucial is the diminished 7th chord, which is represented by the *Edim7* in Ex. 6. "The diminished cluster has a different set of siblings," notes Martino, playing the shape's four offspring chords in Ex. 7. "Lower any one of its notes by a half-step and you get the root of a dominant 7 chord. For example, drop the lowest tone and you get *G♭7*. Or, drop the second-lowest note and you get *C7*. Drop the second-highest note and you get *E♭7*. And if you lower the highest note, you'll hear *A7*. To me, *this* is the guitar. These two parental shapes—the augmented and diminished clusters—are the fastest way to learn the instrument, provided you have a basic command of chord theory and scale spellings."

SYMMETRY IN MOTION

The most beautiful aspect of the two parental forms has to be their perfect symmetry. The augmented triad, for example, divides the octave equally into three intervals of a major third. For that reason, if you move the shape up or down the fretboard a major third (or four frets), as shown in Ex. 8, the chord doesn't change in any way except for the fact that its tones become rearranged (with one shifted an octave). We're playing the same shape at the 4th, 8th, and 12th frets, yet the

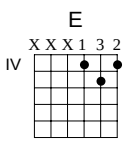
EX. 4

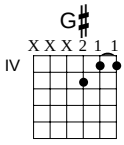
Augmented cluster

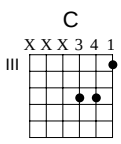


EX. 5

Augmented cluster's offspring

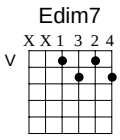






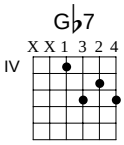
EX. 6

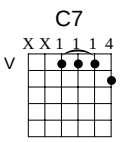
Diminished cluster

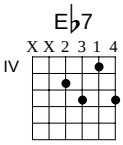


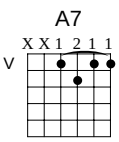
EX. 7

Diminished cluster's offspring



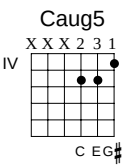


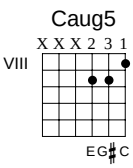


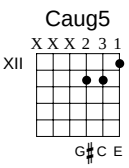


EX. 8

Symmetrical inversion







harmony, note names, and fingering remain exactly the same.

"It gives you automatic inversions of itself with no necessity of memorizing new fingerings," observes Martino. "If you arrange the 12 notes of the chromatic scale like the face of a clock, you'll see that the augmented cluster forms a perfect triangle [Ex. 9]."

Due to its perfect symmetry, there are only four different augmented triads, as shown by the four triangles in Ex. 9. Our *Caug5* triad is in bold, spelled enharmonically *C-E-A♭*. Similarly the other parental shape—the diminished cluster—is perfectly symmetrical as well. Dividing the octave equally into four minor-thirds, a diminished chord repeats itself every three frets as shown in Ex. 10. Again, the only thing that changes in these four identical grips is the arrangement of the notes.

"The diminished cluster forms a square," says Martino, referring to Ex. 11. "Unlike the piano, which uses a seven-plus-five system of addition, the guitar uses *multiplication*. With both of our parental forms we cover all 12 notes of the chromatic scale by multiplying three times four."

MOVIN' ON UP

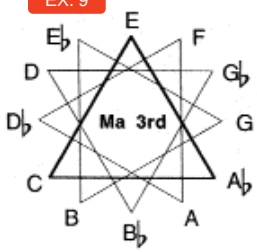
When it comes to inverting chords, the portability of Martino's two parental forms proves very convenient. Take the augmented cluster, for example. Remember how, in Ex. 5, a fourth-position *Caug5* triad yielded a different major chord each time we lowered one of its tones? Well, if you move *Caug5* up to its first inversion at the 8th fret, it *still* produces the same three major triads (though you'll find the trio of triads has swapped fingerings). For instance, in Ex. 5, we dropped the lowest note of the chord, *C*, a half-step and our *Caug5* became an *E* major triad. But in Ex. 12, the augmented cluster is at the eighth position, and *C* appears on the first string. Now, lowering the *highest* note yields *E* major, as shown.

Ex. 13 shows the same process as it relates to the diminished cluster. Here, by lowering *G* to *G♭*, *Edim7* still becomes *G♭7*, but because we're at the eighth position, the dominant chord is now achieved by lowering the second-highest note in the diminished form, not the lowest note (as was the case with the fifth-position *Edim7* in Ex. 7).

THE BIG BANG

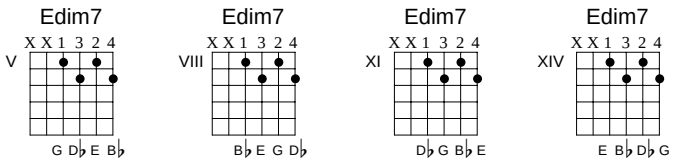
"These clusters are great for generating chord progressions," shares Martino. "By lowering one note here, raising another there, you have a very efficient way of gen-

EX. 9



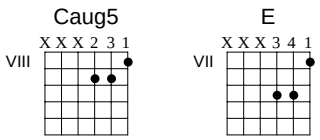
EX. 10

Symmetrical inversion

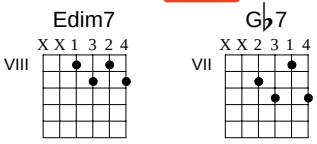


EX. 11

EX. 12



EX. 13



erating complex harmonies—and with the smoothest of voice leading."

Martino demonstrates the approach in Ex. 14, taking the diminished parental form (in this case, *C♯dim7*) and expanding it one note at a time. First, he drops *C♯* to *C,* yielding *C7.* Next, he raises *B♭* to *B.* ("That gives you a beautiful form of *Cmaj7.*") Adding an open-*A* pedal tone to the *Cmaj7* chord creates a chimey *Am9* voicing. Raising *G* a half-step produces the tendon-twisting *Am9(maj7)*, which, when you raise *E* to *E♯*, relaxes into the ear-twisting *Am9♯5(maj7)* chord that closes the progression.

"It's a whole different approach to shifting harmony from the standard method, which involves creating chords from scale tones and applying complex alterations," says Martino. "And again, it's so *portable.* Shift our original *C♯dim7* up to its next inversion—which is simply the exact same fingering moved up to the 5th fret—and you can easily generate a new inversion of the entire progression [Ex. 15]. Just as we did in the previous example, we're expanding one note at a time, but this time the same notes are on different strings."

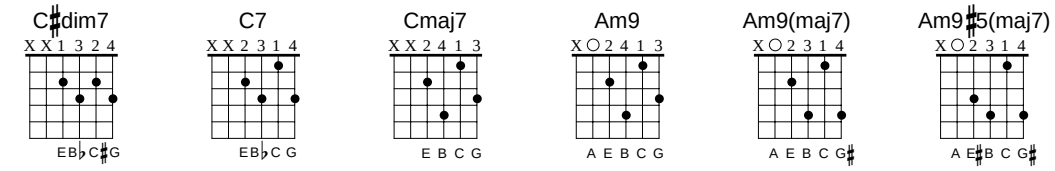
BRANCHING OUT

The next step toward conquering the fretboard using Martino's two parental forms is to place the clusters on different groups of strings so you can take advantage of the many timbres and pitch ranges that the guitar offers. Ex. 16 displays seven ways of fretting the augmented cluster using unique string groups, while Ex. 17 shows five ways of doing the same with the diminished cluster. In each example the chord remains the same throughout, but the inversion and timbral character changes with each new grip.

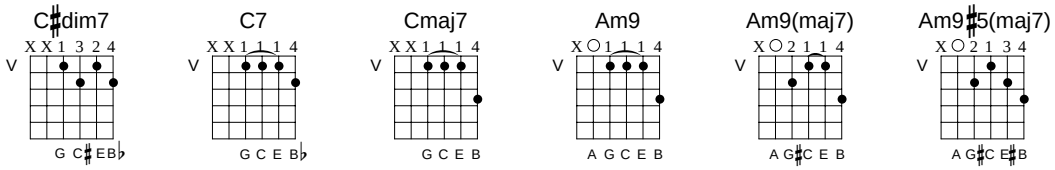
PAT MARTINO'S GEAR

Guitar: Gibson Pat Martino Signature Model.
Amp: Acoustic Image.
Strings: GHS, .016-.058 set.

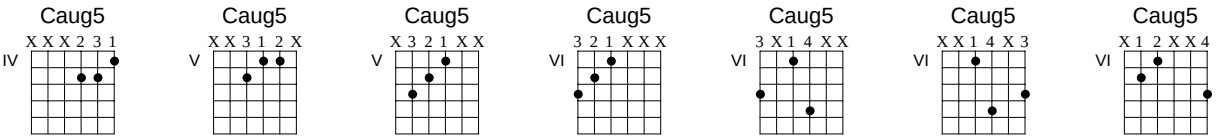
EX. 14 Expanding diminished cluster



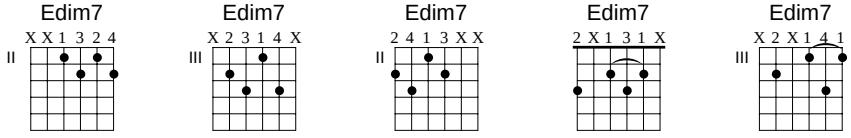
EX. 15 Expanding diminished cluster inverted



EX. 16 Augmented cluster



EX. 17 Diminished cluster



And yes, with any of Ex. 16's augmented voicings, if you lower any single chord tone, you'll get a major triad, and similarly, if you flatten any note in one of Ex. 17's diminished forms, you'll hear a dominant 7 chord. Martino especially likes the open-voiced sound you get by placing the parental forms on non-adjacent string sets—and the offspring they produce. Ex. 18 shows one of Ex. 16's shimmering open-voiced *Caug5* chords with its offspring (not counting the minor chords you get when you raise any one of *Caug5*'s tones), and Ex. 19 shows one of Ex. 17's open-voiced *Edim7* clusters with its offspring.

CHROMATIC ATTACK!

Now that you've seen how the two parental shapes act as key centers and yield dozens of colorful, closely-related chords, it's time to start thinking of them as launching pads for melodic improvisation—which is exactly what Martino does. That means putting aside notions of scale patterns and really learning to visualize the fretboard as a network of shapes connected by neighbor tones and passing tones.

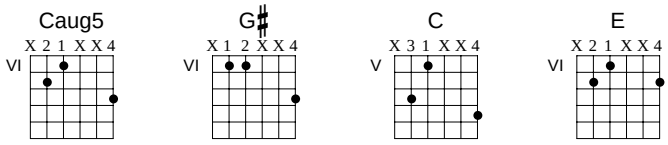
"Chromatic intermediates intertwine across the entire fretboard," says Martino, demonstrating this fact with one of his trademark chromatic runs in Ex. 20. While there are a ton of chromatic notes in this long descending line, the blazing riff somehow makes the entire neck seem to scream "*C7*." "You can use chromatic notes to weave the whole fretboard into one given topic."

ENCORE

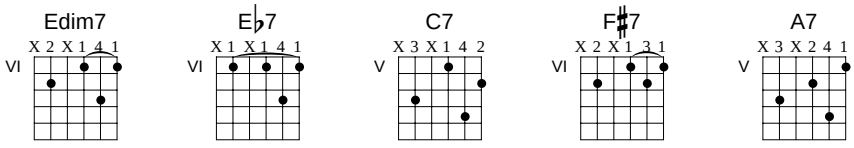
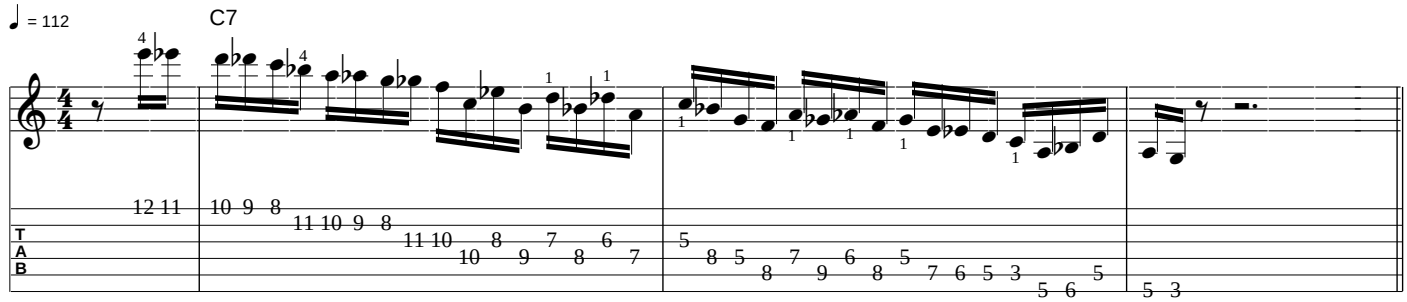
It's one of the most inspirational stories in jazz: Pat Martino learning to become a master guitarist—twice. "The first time around, I was a dead-serious youngster who was tuned in to the competitive nature of our culture and has fully motivated to achieve success," says Martino, who, in 1980, at the peak of his form, suffered a catastrophic brain aneurysm that caused him to forget all he knew about playing guitar. "My second relationship with the instrument began in a much more intimate, innocent kind of way. The guitar became a playful resting place during a period of intense therapeutic recovery. It allowed me to take my attention away from my ordeal. I was able to enjoy the guitar in a pure and almost childish way—like a child does a toy. I think we're ultimately chosen to be childish. That's exactly how we come into this world and exactly how we leave it. The guitar just happens to be my favorite toy."

For more on Pat Martino, his new album Think Tank, and his ideas on the nature of guitar, visit him online at patmartino.com.

EX. 18 Open-voiced augmented cluster and offspring



EX. 19 Open-voiced diminished cluster and offspring



EX. 20